LYNCHBURG CITY COUNCIL
Agenda Item Summary

MEETING DATE: December 16, 2003 **AGENDA ITEM NO.: 5**

CONSENT: X **REGULAR:** **CLOSED SESSION:** (Confidential)

ACTION: X **INFORMATION:**

ITEM TITLE: Wards Road Improvement Public/Private Partnership

RECOMMENDATION:

Approval of resolution to enter into an agreement with Wal-Mart and Swift Creek Capital, LLC to spend $206,800 to design and construct a traffic signal and other improvements within the right-of-way at the proposed new main entrance to Wal-Mart/Sams. $50,000 of the $206,800 is from funds previously provided to the City to improve traffic in the Harvard Street/Wards Road corridor. These improvements within the right-of-way are part of a public/private partnership project costing over $400,000.

SUMMARY:

The current intersection between the Wal-Mart Entrance/Exit and Wards Road is very congested and does not have the capacity needed to handle the volume of traffic. The entrance into Wal-Mart was also poorly designed in that it does not have adequate queuing space for vehicles entering the lot. Many times this queue backs into Wards Road causing unsafe conditions. The City has an opportunity to partner with both Wal-Mart and Swift Creek Capital, LLC (the developer for Montview Commons, a proposed retail center on Wards Road) to move/replace the current traffic signal with a new signal directly between the Wal-Mart and Sams properties (approximately 450' to the south of the existing intersection). This new signalized intersection would be enhanced to include standard right-turn lanes, dual left-turn lanes into Wal-Mart, and a significantly improved entrance into Wal-Mart that will include doubling the existing throat (driveway) length. Increasing the throat length will allow more vehicles to queue on-site versus backing into Wards Road. As part of the new design plan, the existing Wal-Mart and Sam's entrances will be made right-in/right-out only (medians will be closed). These changes will significantly improve safety on the corridor.

Due to the proposed improvements, the Wards Road corridor should see a significant improvement in travel time and delays. The attached traffic report completed by City staff shows that average delays, number of stops, and speeds will all improve on Wards Road by moving the signal and improving the intersection. Due to these improvements to the corridor, City staff thinks the use of public funds is warranted in this case.

Both Wal-Mart and Swift Creek Capital, LLC are responsible for 100 percent of all costs associated with their new driveways on their property. Figure A summarizes the cost and responsibility allocation.

In order to accomplish this project, it will be necessary to have a formal agreement among the parties. The agreement is being finalized at this time. A summary of the key points in the agreement is attached.

PRIOR ACTION(S): December 2, 2003 Physical Development Committee

FISCAL IMPACT:

Funding for this work is proposed to be transferred from previously completed Wards Rd. projects, from the General Street Improvements program and from other City funds designated for Harvard Street/Wards Rd. traffic improvements.

RESOLUTION

BE IT RESOLVED That the Fiscal Year 2004 Capital Improvements Plan is amended and $50,000 is appropriated with resources of $50,000 from the City Capital Projects Fund Designated Fund Balance to support the capital improvements to Wards Road; and

BE IT FURTHER RESOLVED That the City Manager is hereby authorized to enter into and sign an agreement with Wal-Mart and Swift Creek Capital, LLC to improve a portion of Wards Road using previously appropriated and unspent funds from the CIP budget for improvements to Wards Road.

Introduced: Adopted:

Certified: _____
Clerk of Council

207L

SOURCE	APPROPRIATION	SPENT TO DATE	BALANCE	PROPOSED
T0009 Wards Road Signal	$36,200	$25,501	$10,699	$10,699
T0016 Wards Road Improvements	$197,926	$164,291	$33,635	$33,635
T0002 General Street Improvements	$674,261	$242,641	$448,620	$112,500
Designated Fund Balance for Harvard Street/Wards Road Improvements	$50,000	$0	$50,000	$50,000 (1)

(1) The $50,000 was given to City by Jerry Falwell, Jr. to improve Harvard Street/Wards Road as part of the Texas Roadhouse approval. This is an acceptable use for these funds and has been approved by Mr. Falwell.

CONTACT(S):

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Lee Newland 455-3947
Bruce McNabb 455-3960

ATTACHMENT(S):

Resolution
Summary of development agreement
Figure showing improvements and proposed cost responsibilities.
City Traffic report summarizing impacts of improvements.

REVIEWED BY: lkp

Summary of Development Agreement

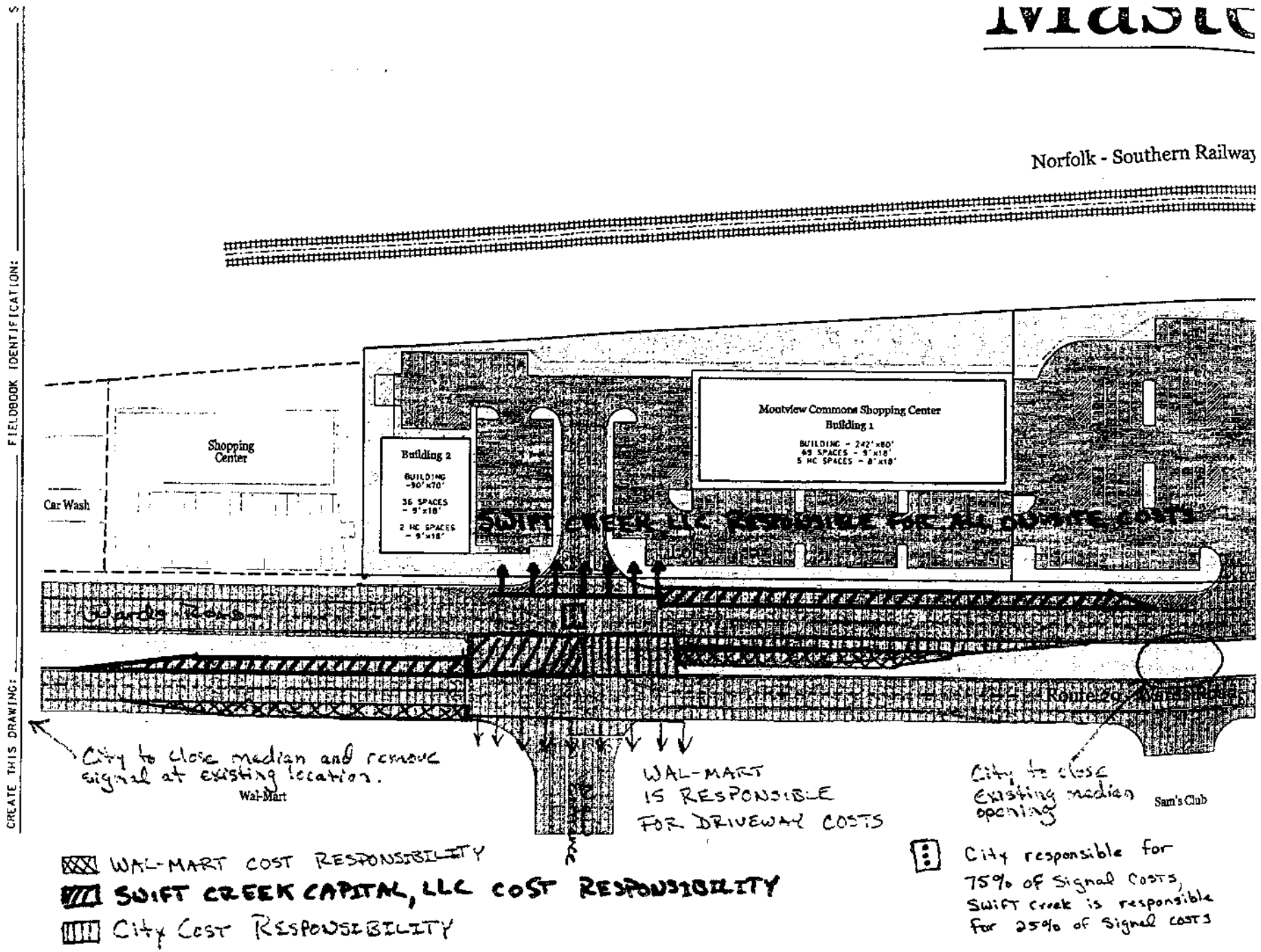
The methodology used to determine the distribution of costs within the right-of-way was to make both Wal-Mart and Swift Creek Capital, LLC pay for improvements need to access their sites. This would include left-turn lanes, right-turn lanes and their fair share cost of the traffic signal. The only exception to this methodology was not to charge Wal-Mart again for improvements they did as part of their existing signal. This would include the cost of the signal and one left-turn lane. The proposed distribution of costs within the right-of-way is as follows:

1. **City of Lynchburg will pay for**
    a. 75% of traffic signal (Wal-Mart has already paid for one signal at existing entrance)
    b. One left-turn lane into Wal-Mart (Wal-Mart already paid for this left-turn lane at existing intersection)
    c. Closing and removing existing medians and signal
    d. 50% of new median opening (Wal-Mart has already installed several median openings)
    e. 80% of traffic control on Wards Road
    f. For a total construction cost of approximately $170,000
    g. Design costs were allocated similar to construction costs with the City's share being $25,000. City engineering and inspection will be $11,835.

2. **Wal-Mart will pay for**
    a. Right-turn lane into their site
    b. One left-turn lane into their site from Wards Road (final left-turn as part of dual left turn lanes)
    c. Curb and gutter in front of their proposed site entrance
    d. For a total of approximately $23,000 (construction only)
    e. Design costs were allocated similar to construction costs with Wal-Mart's share being approximately $3,000.

3. **Montview (Swift Creek Capital, LLC) will pay for**
    a. 25% of traffic signal
    b. 50% of median opening
    c. One right-turn lane and left-turn lane into their site from Wards Road
    d. Curb and gutter adjacent to their site
    e. 20% of traffic control on Wards Road
    f. For a total of approximately $75,000 (construction only)
    g. Design costs were allocated similar to construction costs with Swift Creek's share being approximately $10,000.

Figure A. Summary of Responsibility Allocation between City, Wal-Mart, and Swift Creek Capital, LLC.



City of Lynchburg

City of Lynchburg
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Performed by: DAS

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Traffic Impact Study

Wards Road – Intersection Operations

August 2003
Prepared for:
City of Lynchburg, Virginia

Date: 07/21/2003 **Performed by: DAS**
Location: Wards Road **Type of Study: Traffic Impact Study**

Introduction

The purpose of this study is to evaluate the effects of moving the current signal at Wal-Mart south by approximately 450 feet (Alternative B) as compared to leaving the signal at its current location (Alternative A or No Build). This study considers the additional traffic impact caused by the development of retail stores and restaurants (Montview Commons and others) on the corridor along U.S Route 29 Business/Wards Road between Harvard Street and Atlanta Avenue. The length of the corridor is approximately 0.7 miles. All the development is to be carried out adjacent to route 29 Business North and includes the development of a Montview Commons Shopping Center, grocery store, sit-down restaurant and a fast food restaurant.

Existing Conditions

The corridor under study has signalized intersections at the crossing of Wards Road with Harvard Street, Entrance to Wal-Mart and Atlanta Avenue. There are also unsignalized intersections at crossing of Wards Road with entrance to Sam's club and entrance to Texas steak house. The Texas steakhouse intersection is a right in –right out intersection while as the entrance to Sam's club is a full access intersection.

Scenarios

Since the study is to evaluate the traffic impact of the new development, two possible alternatives are to be evaluated:

- Alternative A (No Build) – Basically a 'do nothing' or baseline scenario. The additional traffic created due to the development will be loaded on the corridor without any modifications to the corridor apart from creation of driveways for entry into the new development. Figure 1 attached to this report displays the layout of Alternative A.

- Alternative B – Figure 2 attached to this report displays the layout of Alternative B. A number of modifications will be carried out such as:
    - Creation of new entrance to Wal-Mart and Sam's Club right across the entrance to Montview Commons Shopping Center that will be signalized. This will include right-turn lanes from Wards Rd and dual-left turn into Wal-Mart from Wards Rd.
    - Existing entrance to Wal-Mart will become only a right in-right out unsignalized intersection.
    - Existing entrance to Sam's Club will become a right in-right out intersection from a full access unsignalized intersection.

.Engineering Evaluation

Trip Generation

Substantial additional traffic will be created due to the new development as shown in the Table1. The period under analysis for this study was the PM Peak Hour period.

Trip Generation Table

Reference: ITE Trip Generation 6th Edition
AM Peak - One hour between 7 and 9 a.m
PM Peak - One hour between 4 and 6 p.m

Development	ITE LUC	Weekday Daily Traffic		AM Peak hour Traffic		PM Peak hour Traffic	
		Enter	Exit	Enter	Exit	Enter	Exit
Montview Commons Shopping Center	820	1172	1172	89	76	121	128
Commercial Building (Shopping Center)	820	582	582	44	37	60	64
Grocery Store	850	791	791	13	9	94	89
Sit-Down Restaurant	831	378	378	5	2	30	14
Fast-Food with Drive thru Restaurant	834	1190	1190	130	110	83	77

Table 1 – Trip Generation

Trip Distribution

It was required to determine the distribution of traffic generated by each development during the peak PM period. The three main regions from where traffic into the corridor under consideration can possibly come from and go to are 1) Wards Road (North) 2) Wards Road (South) 3) Wards Ferry (Harvard Street & Atlanta Avenue). Figure 3 shows the overall trip distribution diagram and Table 2 shows the detailed trip distribution values. Turning movement counts at Wal-Mart entrance were used to make certain assumptions to generate Table 2.

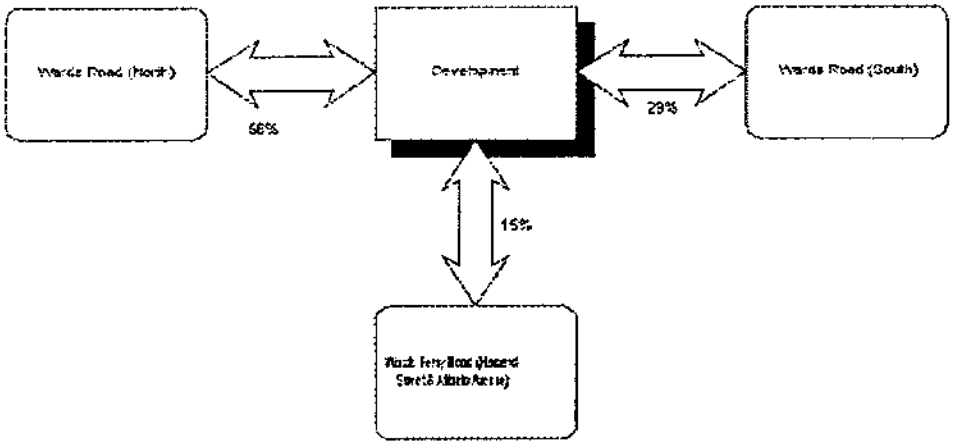

Figure 3 – Overall Trip Distribution

Trip Distribution Table

Development	Wards Road (North)		Wards Road (South)		Wards Ferry		Total	
	From	To	From	To	From	To	From	To
Montview Commons Shopping Center	69	71	41	30	18	20	128	121
Commercial Building (Building 2)	35	35	21	15	8	10	64	60
Grocery Store	46	56	29	24	14	14	89	94
Sit-Down Restaurant	8	18	4	8	2	4	14	30
Fast-Food Restaurant with Drive thru	42	50	25	21	10	12	77	83

Table 2 – Trip distribution

Traffic Assignment

The additional traffic was loaded onto the network depending upon the route choice which depended on perceived travel time and discomfort due to uncommon maneuvers like U-turns. Hence, the additional traffic loaded on the network depended upon which alternative was being analyzed. For example Atlanta Avenue would have higher proportion of traffic in Alternative A as compared to Alternative B. This is mainly because for Alternative A, traffic coming from northern part of the city (Wards Ferry) and going to either the Montview Commons Shopping Center or grocery store would prefer to come down Atlanta Avenue and make a left turn onto Wards Road (towards north) rather than coming down Harvard Street and turning onto Wards Road (towards south) and then make a U-turn onto Wards Road (towards north).

Analysis & Simulation

The network was developed in Synchro Version 5. The traffic data was loaded onto the network according to the alternative being evaluated. Phase features, timings, offsets, cycle length etc were optimized for both scenarios. Various Measures of Effectiveness were obtained for each scenario. Each scenario was then simulated in Simtraffic a number of times with variable random seeds and an average value of various Measures of Effectiveness (MOEs) was obtained.

Results

Table 3 shows the MOEs of both alternatives obtained in Synchro and Simtraffic.

Synchro Output

MOE	Alternative A (No Build)	Alternative B	% Benefit of Alternative B over Alternative A
Signal Delay/Veh (secs)	8	4	50.00
Total Signal Delay (hr)	61	31	49.18
Total Stops	5809	5349	7.92
Stops/Veh	0.21	0.20	4.76
Average Speed (mph)	17	23	35.29

Simtraffic Output

MOE	Alternative A (No Build)	Alternative B	% Benefit of Alternative B over Alternative A
Total Delay (hr)	60.46	53	12.34
Delay/Veh (secs)	48.13	41.33	14.13
Stop Delay (hr)	40.06	32.73	18.30
Stopped Delay/Veh (secs)	31.86	25.53	19.87
Total Stops	5633	5188	7.90
Stop/Veh	1.243	1.123	9.65
Average Speed (mph)	18	18.33	1.83

Table 3 – MOEs obtained in Synchro and Simtraffic

Conclusions and Recommendations

Alternative B is a better alternative on a network wide basis as compared to Alternative A (No Build). The signal delay in alternative B (according to the output in Synchro) is reduced by 50

percent while the average travel speed increases from 17 mph to 23 mph. The total delay estimated by Simtraffic reduced by about 12 percent for alternative B while stopped delay decreased by about 19 percent. Overall, alternative B is a much more efficient with benefits ranging up to 50 percent.

Alternative B is more efficient primarily because creation of the new signalized intersection eases the congestion for traffic coming out of Wal-Mart. This is mainly due to the fact that the new intersection has much more capacity then the existing signalized intersection and also provides access to Sam's Club. Also, creation of the new intersection provides two access and egress points for Wal-Mart and Sam's Club traffic as compared to the existing one for each. The new intersection also reduces U-turn maneuvers for traffic coming in and out of proposed Montview Commons Shopping Center. There are also significant safety improvements by making the existing Sam's Club entrance a right-in/right-out only.

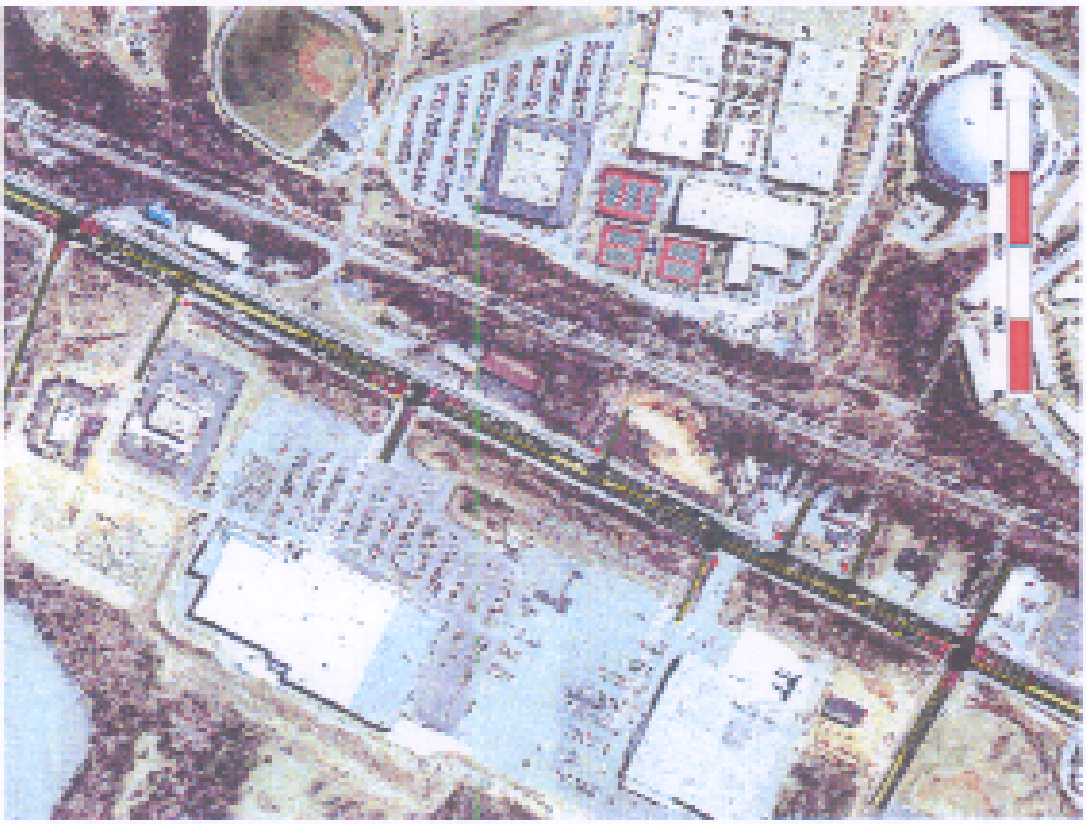

Figure 1. Existing Conditions.

Figure 2. Proposed lane configuration.